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**Whimbrel Survivorship Throughout the Annual Cycle. 2017 Interim Report.**

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**Background:**

Recent declines in Whimbrel populations are believed to reflect mortality factors within critical periods of the annual cycle. Of particular concern is both legal and illegal hunting during the fall migration and winter periods. However, isolating mortality during these periods has proven difficult. Whimbrels breeding on the Mackenzie Delta are vulnerable to hunting 1) on staging areas in Atlantic Canada, 2) when put down by storms in the West Indies (Guadeloupe, Martinique, Barbados, Trinidad and Tobago) during fall migration and 3) during the winter months along the northern coast of South America (Brazil, French Guiana, Suriname). Birds that survive the winter leave South America in March and stage on the Gulf of Mexico (primarily Texas) before a transcontinental flight to breeding grounds. This project will attempt to isolate mortality rates during the fall and winter periods by deploying satellite transmitters on staging grounds in Atlantic Canada and tracking birds through their annual cycle. We request funds to deploy and monitor 3 satellite transmitters. These transmitters will be added to several additional units from other sources for a total of 6 units. The tracks from deployed transmitters will be combined with 14 other tracks from previous tracking studies to assess mortality relative to exposure during critical periods of the life cycle. In addition to the satellite transmitters, the project will attempt to deploy 20 nanotags to evaluate local movements within Atlantic Canada and to detect birds arriving in coastal Texas following the winter in northern South America. These birds will be added to the sample of satellite birds to evaluate overwinter mortality.

Whimbrels that breed on the Mackenzie Delta undergo a loop migration that includes staging in Atlantic Canada prior to embarking on a 5,000-km, transoceanic flight to wintering areas along the coast of northern South America. To prepare for this flight birds feed on blueberries within commercial fields where they are considered crop pests and are actively removed from fields or killed. Our proposal requests funds to quantify the impact of deterrents on staging birds and their consumption of the berry crop, which will be used to develop a framework for a mitigation strategy. The Canadian Wildlife Service will provide matching funds to develop and implement a blueberry farmer survey program focused on assessing the perceived impacts of Whimbrels on blueberry crops. Information gained in these surveys will be used to develop an outreach program and incentives to reduce mortality and disturbance of Whimbrels.
Field Study Summary:

CCB deployed 7 satellite transmitters on whimbrels during the fall 2016 migration on the Acadian Peninsula. A total of 2 nanotags were deployed during the season as well. Field portions of the project took place between 15 July and 30 August 2016.

Satellite Data Extraction:

Whimbrel data is housed in three locations; in WildlifeTracking.org, within the data portal of Movebank.org, and on College of William & Mary provided servers. Data was extracted for all whimbrels from 2008-present.

The whimbrel data was manipulated in three ways: seasonal, with regard to Atlantic Ocean exposure (including the Caribbean Islands), and for exposure to South American stopover and wintering sites. Whimbrel data was separated seasonally to be able to analyze survivorship in relation to the breeding season, spring and fall migration, and the wintering grounds. A database was created that contains each of these seasonal databases.

Data analysis is ongoing, and we expect to finish analysis by 30 September 2017.

Survivorship Results:

Survivorship analysis is ongoing. Bird migrations have been documented for the satellite transmittered birds, with 3 of 6 tags still active (one tag was dropped on the Acadian Peninsula and excluded from analysis).
Figure 1. Migration routes and current locations of Whimbrels tagged on the Acadian Peninsula during the fall 2016 season.